

DOCKET NO: 272480US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
KLAUS SCHULTES, ET AL : GROUP: 1796  
SERIAL NO: 10/539,132 :  
FILED: JUNE 16, 2005 : EXAMINER: REDDY, K.  
RCE FILED: MAY 4, 2009  
FOR: PROCESS FOR PREPARING :  
AQUEOUS DISPERSIONS

APPEAL BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal of the Rejection dated May 26, 2009 of twice-rejected Claims 18 and 20-38. A Notice of Appeal was filed August 26, 2009.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Roehm GmbH & Co. KG, having an address Kirschenallee, 64293 Darmstadt, Germany.

II. RELATED APPEALS AND INTERFERENCES

Appellants, Appellants' legal representative and the assignee are aware of no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

### III. STATUS OF THE CLAIMS

Claims 18 and 20-38 stand rejected and are herein appealed. Claims 1-17 and 19 have been canceled.

### IV. STATUS OF THE AMENDMENTS

No amendment under 37 CFR 1.116 has been filed.

### V. SUMMARY OF THE CLAIMED SUBJECT MATTER

A summary of the claimed subject matter, as claimed in sole independent Claim 18, is mapped out below, with reference to page and line numbers in the corrected specification filed August 11, 2005 added in **[bold]** after each element.

A process for preparing an aqueous polymer dispersion, by **[page 8, line 14]**

a) preparing an initial charge of an aqueous emulsion **[page 8, lines 15-16]** of a long chain alkyl alcohol **[page 24, lines 23-29]** or a seed latex by polymerization of an alkyl (meth)acrylate in an aqueous medium comprising an emulsifier **[page 11, line 30 to page 12, line 1]** to a seed particle radius ranging from 3.0 to 20.0 nm **[page 23, lines 28-33]**

b) adding from 25.0 to 45.0 parts by weight of a first composition comprising:

A) from 50.0 to 99.9 parts by weight of an alkyl (meth)acrylate having from 1 to 20 carbon atoms in the alkyl radical,

B) from 0.0 to 40.0 parts by weight of an alkyl acrylate having from 1 to 20 carbon atoms in the alkyl radical,

C) from 0.1 to 10.0 parts by weight of a crosslinking monomer,  
and

D) from 0.0 to 8.0 parts by weight of a styrenic monomer of the formula (I)



where each of the radicals  $R^1$  to  $R^5$ , independently of the others, is hydrogen, a halogen, a  $C_{1-6}$ -alkyl group or a  $C_{2-6}$ -alkenyl group, and the radical  $R^6$  is hydrogen or an alkyl group having from 1 to 6 carbon atoms, [page 8, line 17 to page 9, line 3] emulsified in water with an emulsifier, [page 38, Table 1] to said aqueous emulsion or seed latex, and

polymerizing the added monomers to a conversion of at least 85.0 % by weight, based on the total weight of components A), B), C) and D), [page 9, lines 4-6]

c) adding from 35.0 to 55.0 parts by weight of a second composition comprising

E) from 80.0 to 100.0 parts by weight of a (meth)acrylate,

F) from 0.05 to 10.0 parts by weight of a crosslinking monomer,

and

G) from 0.0 to 20.0 parts by weight of a styrenic monomer of the formula (I), [page 9, lines 7-15] emulsified in water with an emulsifier, [page 38, Table 1] to the aqueous polymer emulsion of step (b), and

polymerizing the added monomers to a conversion of at least 85.0 % by weight, based on the total weight of components E), F) and G), **[page 9, lines 16-18]**

d) adding from 10.0 to 30.0 parts by weight of a third composition comprising:

H) from 50.0 to 100.0 parts by weight of an alkyl (meth)acrylate having from 1 to 20 carbon atoms in the alkyl radical,

I) from 0.0 to 40.0 parts by weight of an alkyl acrylate having from 1 to 20 carbon atoms in the alkyl radical, and

J) from 0.0 to 10.0 parts by weight of a styrenic monomer of the formula (I), **[page 9, lines 19-29]** emulsified in water with an emulsifier, **[page 38, Table 1]** to the aqueous polymer emulsion of step (c),

and polymerizing to a conversion of at least 85.0 % by weight, based on the total weight of components H), I) and J), **[page 9, lines 30-32]**

where the parts by weight given for the compositions b), c) and d) give a total of 100.0 parts by weight, **[page 9, lines 33-35]**

wherein

e) each polymerization is carried out at a temperature in the range from above 60 to below 90° C **[page 9, lines 36-37]** and

f) the relative proportions of all of the substances are selected in such a way that the total weight of components A) to J), based on the total weight of the aqueous dispersion, is greater than 50.0 % by weight, **[page 9, line 28 to page 10, line 3]** the product particles have a particle size ranging from 150 to less than 250 nm, **[page 10, lines 23-26]** and the amount of coagulate in the

dispersion is 0.1 % or less by wt, based on the total weight of the dispersion.

**[page 26, lines 18-28]**

## VI. GROUND OF REJECTION

### Ground (A)

Claims 18, 20-23, 25-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over US 4,180,529 (Hofmann) in view of US 4,173,596 (De Witt);

### Ground (B)

Claims 18, 20-21, 25-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of US 4,914,142 (Takarabe et al);

### Ground (C)

Claims 18, 20-21, 24-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of US 4,371,677 (Morningstar et al);

### Ground (D)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of De Witt, further in view of US 4,542,179 (Falk et al);

### Ground (E)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of De Witt, further in view of US 5,777,034 (Shah et al);

Ground (F)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Takarabe et al, further in view of Falk et al;

Ground (G)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Takarabe et al, further in view of Shah et al;

Ground (H)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Morningstar et al, further in view of Falk et al; and

Ground (I)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Morningstar et al, each further in view of Shah et al.

VII. ARGUMENT

Ground (A)

Claims 18, 20-23, 25-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of De Witt. That rejection is untenable and should not be sustained.

The present claimed process, as recited in above-amended Claim 18, is characterized by, *inter alia*, preparing an aqueous polymer dispersion of a core-shell polymer having a total weight of components (A) to (J), i.e., polymer solids content, of greater than 50% by weight, and a coagulate content less than 0.1% by weight.

The specification herein contains comparative data between the presently-claimed invention and the prior art. Core-shell particles labeled as B1 and B2 are according to the present invention. Core-shell particles labeled as VB1 through VB7 are according to the prior art. The data is described in the specification beginning at page 32, line 14. As described in the specification at page 34, lines 1-4, for Comparative Examples VB1 and VB2, any attempt to achieve a solids content higher than 48% by weight for the resultant dispersion resulted in observation of an increased amount of coagulate (>1% by weight of the dispersion). See also the data in Tables 1 and 2, wherein the respective monomer contents for the inventive core-shell particles and the comparative core-shell particles are similar. For prior art examples VB3 through VB7, see the data in Table 7 where, in each case, **both** a solids content of over 50%, **and** a coagulate content of 0.1% or less, were not obtained.

The prior art compared, as discussed above, is closer to the presently-claimed invention than Hofmann or any of the other prior art applied herein.

Hofmann discloses a multi-layered graft acrylic polymer that is comprised of an elastomeric core formed of cross-linked acrylate, a non-elastomeric, relatively hard second layer of a cross-linked methacrylate polymer, wherein the methacrylate monomer may be copolymerized with optionally another monoethylenically unsaturated monomer, a third layer of elastomeric polymerized alkyl acrylate with optionally another monoethylenically unsaturated monomer, and a fourth layer non-elastomeric, relatively hard alkyl methacrylate polymer, wherein the methacrylate monomer is optionally copolymerized with another monoethylenically unsaturated monomer.

The Examiner acknowledges that Hofmann does not disclose various limitations of the claims, i.e., an emulsion of a seed latex whose particle radius is 3.0 to 20 nm as the initial charge; the total weight of components A-J, based on the total weight of the aqueous

dispersion; the properties of the molded product, and the amount of coagulate in the dispersion.

DeWitt does not remedy the deficiencies of Hofmann.

DeWitt discloses that the impact resistance of rigid polymeric resins is enhanced by incorporation of the polymeric toughening agent described therein in various polymer matrixes. However, as with Hofmann, there is no description of a core/shell structured polymer product that is produced from a dispersion that has a coagulate content of any amount.

The Examiner holds that it would have been obvious to continue the polymerization in Hofmann's first stage until a seed polymer with a particle size of 20 nm to 200 nm is obtained in view of DeWitt. Regarding properties and amount of coagulate in the dispersion, the Examiner finds that the applied prior art discloses essentially the same molding composition in aqueous dispersion made by a substantially similar process as that presently claimed, and that, in effect, the presently-recited coagulate amount would result.

With regard to the above-discussed comparative data, the Examiner finds that they are not side-by-side comparisons and that it is not clear what parameters or variables are responsible for the difference in coagulate content.

In reply, the Examiner has not presented a *prima facie* case of obviousness. Thus, there is no requirement for any side-by-side comparisons or showings of unexpected results. Nevertheless, the comparative data of record is still pertinent to patentability and must be considered. Moreover, in addition to the other arguments made above, the presently-claimed process requires that in each of steps b) and c) and d), the recited composition, respectively, be emulsified in water with an emulsifier, i.e., be an emulsion. In Hofmann, on the other hand, the components for each stage, while the presence of an emulsifier for each stage is disclosed in the Examples, are not present in a form emulsified in water.



Note furthermore that, for example, Comparative Examples VB1 and VB2 employed emulsions for each stage and for that reason are closer to the presently-claimed invention than the applied prior art. As discussed above, a solids content and coagulate content within the terms of the present claims could not be achieved.

Thus, there is no basis for the Examiner's finding that combining Hofmann and DeWitt necessarily results in a coagulate content within the terms of the present claims. Indeed, the applied prior art does not disclose how to achieve both the presently-recited solids content and coagulate content at the same time.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (B)

Claims 18, 20-21, 25-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Takarabe et al. That rejection is untenable and should not be sustained.

Hofmann has been discussed above. Takarabe et al discloses that a highly monodisperse emulsion polymer having a larger particle diameter can be produced while the occurrence of a coagulum or new particles during the polymerization is inhibited to a low level (column 2, lines 30-36), which is achieved by adding a polymerizable monomer to an emulsion polymer containing a high-molecular weight compound having a weight average molecular weight of 20,000 to 2,000,000 as a seed polymer in an amount of the monomer 1.5 to 9.5 times the total volume of the solids in the emulsion polymer, and thereafter, polymerizing the monomer in the presence of a film-forming aid (column 2, lines 37-46).

The Examiner holds that it would have been obvious to use the film-forming aid of Takarabe et al in order to achieve a low coagulum content in Hofmann.

In reply, it does not appear from Takarabe et al that the reason for the low coagulum content is the added presence of the film-forming aid. Indeed, by comparing the examples and comparative examples therein, wherein the comparative examples were not obtained using a film-forming aid known as Texanol, which is 2,2,4-trimethyl-1,3-pentanediol monoisobutyrate (column 7, lines 54-56), it cannot be ascertained what effect, if any, the film-forming aid had on coagulate content. The data in Table 1 therein compares the average particle diameter of the examples with the comparative examples, wherein the average particle diameter of the examples is greater and thus meeting one of Takarabe et al's objectives, and gloss and water resistance properties of a film formed therefrom. There is nothing in the data to suggest any effect of the film-forming aid on a coagulate content. In addition, it is also noted that all of the examples and comparative examples of Takarabe et al have a solids content substantially below the presently-required minimum of 50% by weight. Nor does Takarabe et al disclose or suggest multistage additions of monomers in emulsified form, let alone of the presently-recited monomer compositions.

In sum, even if Hofmann and Takarabe et al were combined, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (C)

Claims 18, 20-21, 24-31 and 34-38 stand rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Morningstar et al. That rejection is untenable and should not be sustained.

Hofmann has been discussed above. Morningstar et al does not remedy the deficiencies of Hofmann.

Morningstar et al discloses a process for producing vinyl copolymer dispersions. In the process, a vinyl- or vinylidene halide is copolymerized with another comonomer in an aqueous medium containing an emulsifier and a long chain alcohol and initiated by a radical initiator. The copolymer product can be prepared by the intermittent polymerization of monomers. The copolymer in the state of a plastisol can be fused at low temperatures or in a shorter time than the normal grade, conventional vinyl copolymers. In order to prepare the vinyl copolymer, an emulsification system is employed in which an emulsifier is present in the aqueous medium, such as a salt of a long chain fatty acid, and a long straight chain saturated alcohol. The alcohol is said to increase the colloidal stability of the polymerization system and to reduce the amount of coagulum in the copolymer latex. Upon isolation of the product polymer, it is combined with a plasticizer to form a plastisol.

In reply, there is no disclosure or suggestion in Morningstar et al of a method of preparing a core/shell (meth)acrylate copolymer which is useful as an impact modifier that is produced under the desirable condition of having a low coagulate content.

In addition, while the addition of the alcohol to the emulsifier system in Morningstar et al may reduce the amount of coagulum in the copolymer latex in Morningstar et al, it is only with the present disclosure as a guide that one of ordinary skill in the art would add it to a system in which a core-shell polymer is being prepared. It could not be predicted what effect the alcohol of Morningstar et al would have on subsequent polymerizations to form the shells of Hofmann once the first stage or seed is formed.

In response to the above argument, the Examiner finds that “advantage of reducing coagulum content is not just restricted to core, but an emulsifier system which can include 1<sup>st</sup> and 2<sup>nd</sup> shell.” The Examiner then finds, in effect, that the present invention is obvious to try.

In reply, Applicants maintain that it cannot be predicted what effect the alcohol of Morningstar et al would have on subsequent polymerizations to form the shells of Hofmann

once the first stage or seed is formed. In addition, Morningstar et al does not remedy the above-deficiency of Hofmann with regard to employing an emulsified composition in each stage. Nor does Morningstar et al shed any light on how to simultaneously achieve the presently-recited coagulate and solids content limitations.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (D)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of De Witt, further in view of Falk et al. That rejection is untenable and should not be sustained.

Falk et al discloses a thermoplastic composition that is comprised of a blend acrylic sequential graft copolymer which has a core/shell structure and a SAN copolymer. Falk et al describes a method of preparing core/shell compositions under emulsion polymerization conditions (column 4, line 44ff). Nothing is disclosed of the preparation of a core/shell copolymer which should have a low coagulate content.

However, Falk et al does not remedy the above-discussed deficiencies in the combination of Hofmann and DeWitt.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (E)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of De Witt, further in view of Shah et al. That rejection is untenable and should not be sustained.

Shah et al is drawn to methacrylate resin blends, disclosed to have improved solvent craze resistance (Abstract).

However, Shah et al does not remedy the above-discussed deficiencies in the combination of Hofmann and DeWitt.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (F)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Takarabe et al, further in view of Falk et al. That rejection is untenable and should not be sustained.

The disclosure of Falk et al is discussed above. However, Falk et al does not remedy the above-discussed deficiencies in the combination of Hofmann and Takarabe et al.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (G)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Takarabe et al, further in view of Shah et al. That rejection is untenable and should not be sustained.

The disclosure of Shah et al is discussed above. However, Shah et al does not remedy the above-discussed deficiencies in the combination of Hofmann and Takarabe et al.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (H)

Claim 32 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Morningstar et al, further in view of Falk et al. That rejection is untenable and should not be sustained.

The disclosure of Falk et al is discussed above. However, Falk et al does not remedy the above-discussed deficiencies in the combination of Hofmann and Morningstar et al.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

Ground (I)

Claim 33 stands rejected under 35 U.S.C. § 103 (a) as unpatentable over Hofmann in view of Morningstar et al, each further in view of Shah et al. That rejection is untenable and should not be sustained.

The disclosure of Shah et al is discussed above. However, Shah et al does not remedy the above-discussed deficiencies in the combination of Hofmann and Morningstar et al.

For all the above reasons, it is respectfully requested that this rejection be REVERSED.

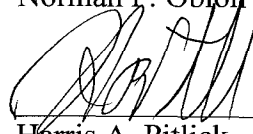
VIII. CONCLUSION

For the above reasons, it is respectfully requested that all the rejections still pending in the Rejection be REVERSED.

Respectfully submitted,

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CLAIMS APPENDIX

Claim 18. A process for preparing an aqueous polymer dispersion, by

a) preparing an initial charge of an aqueous emulsion of a long chain alkyl alcohol or a seed latex by polymerization of an alkyl (meth)acrylate in an aqueous medium comprising an emulsifier to a seed particle radius ranging from 3.0 to 20.0 nm

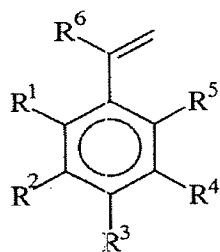
b) adding from 25.0 to 45.0 parts by weight of a first composition comprising:

A) from 50.0 to 99.9 parts by weight of an alkyl (meth)acrylate having from 1 to 20 carbon atoms in the alkyl radical,

B) from 0.0 to 40.0 parts by weight of an alkyl acrylate having from 1 to 20 carbon atoms in the alkyl radical,

C) from 0.1 to 10.0 parts by weight of a crosslinking monomer, and

D) from 0.0 to 8.0 parts by weight of a styrenic monomer of the formula (I)



(I)

where each of the radicals R<sup>1</sup> to R<sup>5</sup>, independently of the others, is hydrogen, a halogen, a C<sub>1-6</sub>-alkyl group or a C<sub>2-6</sub>-alkenyl group, and the radical R<sup>6</sup> is hydrogen or



an alkyl group having from 1 to 6 carbon atoms, emulsified in water with an emulsifier, to said aqueous emulsion or seed latex, and

polymerizing the added monomers to a conversion of at least 85.0 % by weight, based on the total weight of components A), B), C) and D),

c) adding from 35.0 to 55.0 parts by weight of a second composition comprising

E) from 80.0 to 100.0 parts by weight of a (meth)acrylate,

F) from 0.05 to 10.0 parts by weight of a crosslinking monomer,

and

G) from 0.0 to 20.0 parts by weight of a styrenic monomer of the formula (I), emulsified in water with an emulsifier, to the aqueous polymer emulsion of step (b), and

polymerizing the added monomers to a conversion of at least 85.0 % by weight, based on the total weight of components E), F) and G),

d) adding from 10.0 to 30.0 parts by weight of a third composition comprising:

H) from 50.0 to 100.0 parts by weight of an alkyl (meth)acrylate having from 1 to 20 carbon atoms in the alkyl radical,

I) from 0.0 to 40.0 parts by weight of an alkyl acrylate having from 1 to 20 carbon atoms in the alkyl radical, and

J) from 0.0 to 10.0 parts by weight of a styrenic monomer of the formula (I), emulsified in water with an emulsifier, to the aqueous polymer emulsion of step (c),

and polymerizing to a conversion of at least 85.0 % by weight, based on the total weight of components H), I) and J),

where the parts by weight given for the compositions b), c) and d) give a total of 100.0 parts by weight,

wherein

- e) each polymerization is carried out at a temperature in the range from above 60 to below 90° C and
- f) the relative proportions of all of the substances are selected in such a way that the total weight of components A) to J), based on the total weight of the aqueous dispersion, is greater than 50.0 % by weight, the product particles have a particle size ranging from 150 to less than 250 nm, and the amount of coagulate in the dispersion is 0.1 % or less by wt, based on the total weight of the dispersion.

Claim 20. The process according to claim 18, wherein the initial charge comprises from 90.00 to 99.99 parts by weight of water and from 0.01 to 10.00 parts by weight of emulsifier, where the parts by weight of said amounts give a total of 100.00 parts by weight.

Claim 21. The process according to claim 18, wherein said emulsifier is an anionic or nonionic emulsifier.

Claim 22. The process according to claim 18, wherein said initial charge is said seed latex.

Claim 23. The process according to claim 18, wherein a seed latex whose particle radius, measured by the Coulter method, is in the range from 5.0 to

20.0 nm is used to form an initial charge.

Claim 24. The process according to claim 18, wherein said initial charge is an aqueous emulsion of said long chain alkyl alcohol having from 12 to 20 carbon atoms in the alkyl radical.

Claim 25. The process according to claim 18, wherein the polymerization in steps b) to d) is initiated with a peroxodisulphate.

Claim 26. The process according to claim 25, wherein the peroxidisulphate is ammonium and/or alkali metal peroxodisulphate.

Claim 27. The process according to claim 18, wherein the relative proportions of all of the substances are selected in such a way that core-shell particles are obtained with an overall radius, measured by the Coulter method, in the range from 150.0 to less than 250.0 nm.

Claim 28. The process according to claim 18, wherein the second and the third monomer mixture are metered in as required by consumption.

Claim 29. Core-shell particles obtained by a process according to claim 18.

Claim 30. A moulding composition comprising:  
based in each case on its total weight, of

- A) from 1.0 to 50.0 % by weight of at least one core-shell particle according to Claim 29,
- B) from 1.0 to 99.0 % by weight of at least one (meth)acrylic polymer,
- C) from 0.0 to 45 % by weight of at least one styrene-acrylonitrile polymer, and
- D) from 0.0 to 10.0 % by weight of other additives

where the percentages by weight give 100.0 % by weight in total.

Claim 31. The moulding composition according to claim 30, wherein the (meth)acrylic polymer encompasses, based in each case on its total weight, of

- a) from 50.0 to 100.0 % by weight of alkyl methacrylate repeat units having from 1 to 20 carbon atoms in the alkyl radical,
- b) from 0.0 to 40.0 % by weight of alkyl acrylate repeat units having from 1 to 20 carbon atoms in the alkyl radical and
- c) from 0.0 to 8.0 % by weight of styrenic repeat units of the formula (I),

where the percentages by weight give 100.0 % by weight in total.

Claim 32. The moulding composition according to claim 30, wherein the moulding composition comprises styrene/acrylonitrile copolymers, where the styrene/acrylonitrile copolymers are obtained by polymerizing any mixture which is composed of

from 70 to 92 % by weight of styrene,  
from 8 to 30 % by weight of acrylonitrile, and  
from 0 to 22 % by weight of other comonomers, based in each case on the total weight of the monomers to be polymerized.

Claim 33. The moulding composition according to claim 30, wherein the moulding composition comprises, based on its total weight, from 0.1 to 10.0 % by weight of another polymer whose weight-average molecular weight is higher by at least 10 % than that of the (meth)acrylic polymer.

Claim 34. A moulding obtained from a moulding composition according to claim 30.

Claim 35. The moulding according to claim 34, wherein the moulding has a Vicat softening point ISO 306 (B50) of at least 85, a notched impact strength NIS (Charpy179/1eA) to ISO 179 of at least  $6.0 \text{ kJ/m}^2$  at  $23^\circ \text{ C}$  and of at least  $2.5 \text{ kJ/m}^2$  at  $-10^\circ \text{ C}$ , a modulus of elasticity to ISO 527-2 of at least  $1500 \text{ Pa s}$ , a haze to ASTM D 1003 (1997) of at most 2.5 %, a transmittance (D 65/ $10^\circ$ ) to DIN 5033/5036 of at least 88.5 %.

Claim 36. The moulding according to claim 35, wherein the moulding has a Vicat softening point ISO 306 (B50) of at least  $90^\circ \text{ C}$ .

Claim 37. The moulding according to claim 36, wherein the moulding has a Vicat softening point ISO 306 (B50) of at least  $93^\circ \text{ C}$ .

Claim 38. A core-shell particle obtained by a process according to claim 23.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.